

Conference Abstract

# Hurricane Maria and its Impact on the Zoological and Botanical Collections of the University of Puerto Rico

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## Abstract

With a total of more than 150,000 specimens, the 85-year old collections of insects and terrestrial, freshwater, and marine invertebrates of the University of Puerto Rico at Mayagüez (UPRM), western Puerto Rico, are among the most significant repositories for these groups in the Caribbean region. Located in Mayagüez and on Magueyes Island, these collections were created by outstanding insect and invertebrate specialists working in Puerto Rico and surrounding islands. Holdings are particularly strong in the Hemiptera, Lepidoptera, Coleoptera, Collembola, Crustacea, Mollusca, Echinodermata, and Cnidaria. Collecting and curatorial activities, initiated in the 1920s, were maintained throughout the 1980s, resulting in many taxonomically and historically valuable records for the region. From 1990 to 2005, the invertebrate collections were increasingly neglected, with certain parts scattered throughout multiple buildings and rooms, inaccessible, or inadequately stored and at risk of becoming damaged or lost. The support for these collections was not sustained at high levels due to a variety of factors, including changes in the research profile of new academic appointments and the shortsightedness of administrators to fully understand the cultural, educational and scientific value of the museum holdings. With the exception of a federal grant through NSF - DBI (National Science Foundation - Biological Research Collections - PI Frantz - 2007-2010), which initiated a flurry of Museum related activities to improve the deteriorating museum facilities throughout the UPRM campus, the

Museum collections are now facing even more challenges, some anthropogenic and very recently, some natural.

Major Hurricane Maria (Category 4), delivered a devastating blow to the island of Puerto Rico on 20 September 2017. Both terrestrial and marine ecosystems were heavily impacted. Extensive structural damage to roads, telecommunications, water systems, the energy grid and approximately 60,000 houses/buildings made Hurricane Maria the most damaging Hurricane (estimated cost ~ 90 billion dollars) in the USA after Katrina and Harvey. Flooding caused by the direct impact of Hurricane Maria (5 to 40 inches of rain fell during the first 48 hours in Puerto Rico) and subsequent extensive loss of electricity caused unfavorable conditions for the collections. The University of Puerto Rico in Mayaguez closed for approximately 45 days and limited electricity, if any, was available through diesel generators. High levels of humidity and heat can cause further structural damage as well as favor the growth of fungus in enclosed areas of UPRM, including the Museums. Efforts to safeguard the collections will be outlined here to ensure the collections remain a valuable natural asset of the people of Puerto Rico as part of their natural patrimony and as an irreplaceable education tool.

## **Keywords**

Hurricanes, Caribbean, Tropical collections, Marine Sciences, Entomology

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